

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A method to coordinate interconnected information storage and retrieval systems, wherein each of the information and storage systems is capable of communicating with one or more host computers, comprising the steps of:

providing a host computer;

providing a plurality of three information storage and retrieval systems, wherein each information storage and retrieval system comprises a plurality of I/O adapters, two information caches interconnected to said plurality of I/O adapters, a device adapter interconnected to said plurality of I/O adapters and to said information caches, and at least two hard disk arrays interconnected with said device adapter, wherein each hard disk array comprises eight disk drives, wherein each of said plurality of three information storage and retrieval systems is interconnected with each of the other information storage and retrieval systems via a first communication link, and wherein each of said plurality of three information storage and retrieval systems is interconnected with said host computer via a second communication link, and wherein each of said information storage and retrieval systems is interconnected with a different remote storage location;

providing a plurality of six controllers, wherein each of said plurality of six controllers comprises logic enabling that controller to function as a master controller, or as a target controller, or as both a master and a target controller, wherein two active controllers are

disposed in each of said plurality of three information storage and retrieval systems;
~~providing by each of said plurality of controllers, using peer to peer copy operations,~~
~~information from an information storage medium disposed in an information storage and~~
~~retrieval system to an information storage medium disposed in an interconnected remote-~~
~~storage location;~~

designating by said host computer one of said plurality of six controllers as a master controller and the remaining controllers as target controllers, wherein said master controller receives one or more commands from said host computer and then issues one or more master controller commands to each of said target controllers;

generating one or more master controller commands by said master controller;

providing said one or more master controller commands to each of said target controllers, wherein said one or more master controller commands cause said target controllers to adjust the flow of data into and out of each of said one or more information storage and retrieval systems.

2. (original) The method of claim 1, further comprising the step of providing by said master controller to each of said target controllers one or more master controller commands causing each of said target controllers to stop accepting write operations from said one or more host computers.

3. (original) The method of claim 1, further comprising the step of providing by said master controller to each of said target controllers one or more master controller commands causing each of said target controllers to form one or more consistency groups.

4. (previously presented) The method of claim 3, wherein each of said information

storage and retrieval systems is capable of providing information to a different remote storage locations, further comprising the step of providing by said master controller to each of said target controllers one or more master controller commands causing each of said target controllers to stop providing data to said remote storage locations.

5. (original) The method of claim 1, further comprising the steps of:
providing a host computer policy command to said master controller; and
providing at a first time by said master controller to each target controller one or more first master controller commands; and
providing at a second time by said master controller to each target controller one or more second master controller commands.

6. (original) The method of claim 1, further comprising the step of providing status information to said master controller by each target controller.

7. (currently amended) An article of manufacture comprising a computer readable medium having computer readable program code disposed therein to coordinate controllers disposed in a plurality of three interconnected information storage and retrieval systems interconnected with one another via a first communication link, wherein each controller comprises logic enabling that controller to function as a master controller, or as a target controller, or as both a master and a target controller, wherein each of the multiple three information and storage systems is interconnected with the same host computer via a second communication link, wherein each information storage and retrieval system comprises a plurality of I/O adapters, two information caches interconnected to said plurality of I/O adapters, a device adapter interconnected to said plurality of I/O adapters and to said

information caches, and at least two hard disk arrays interconnected with said device adapter, wherein each hard disk array comprises eight disk drives, and wherein each of said information storage and retrieval systems is interconnected with a different remote storage location, and wherein each of said plurality of three information storage and retrieval systems comprises two active controllers, the computer readable program code comprising a series of computer readable program steps to effect:

~~providing, using peer to peer copy operations, information to an information storage medium disposed in an interconnected remote storage location;~~

receiving from said host computer a designation as a master controller and a designation that the remaining controllers comprise target controllers, wherein said master controller receives one or more commands from said host computer and then issues one or more master controller commands to each of said target controllers;

generating one or more master controller commands;

providing said one or more master controller commands to each of said target controllers, wherein said one or more master controller commands cause said target controllers to adjust the flow of data into and out of each of said one or more information storage and retrieval systems.

8. (original) The article of manufacture of claim 7, said computer readable program code further comprising a series of computer readable program steps to effect providing to each of said target controllers one or more master controller commands causing each of said target controllers to stop accepting write operations from said one or more host computers.

9. (original) The article of manufacture of claim 7, the computer readable program

code comprising a series of computer readable program steps to effect providing to each of said target controllers one or more master controller commands causing each of said target controllers to form one or more consistency groups.

10. (previously presented) The article of manufacture of claim 7, wherein each information storage and retrieval system is interconnected with a different remote storage location, the computer readable program code comprising a series of computer readable program steps to effect providing to each of said target controllers one or more master controller commands causing each of said target controllers to stop providing data to said remote storage locations.

11. (original) The article of manufacture of claim 7, said computer readable program code further comprising a series of computer readable program steps to effect:

receiving a host computer policy command;

providing at a first time to each target controller one or more first master controller commands; and

providing at a second time to each target controller one or more second master controller commands.

12. (original) The article of manufacture of claim 7, said computer readable program code further comprising a series of computer readable program steps to effect receiving status information from each target controller.

13. (currently amended) A computer program product embodied in a computer readable medium, said computer program product being usable with a programmable computer processor to coordinate a plurality of controllers disposed in a plurality of three interconnected

information storage and retrieval systems interconnected with one another using a first communication link, wherein each of said plurality of controllers comprises logic enabling that controller to function as a master controller, or as a target controller, or as both a master and a target controller, wherein each information storage and retrieval system comprises a plurality of I/O adapters, two information caches interconnected to said plurality of I/O adapters, a device adapter interconnected to said plurality of I/O adapters and to said information caches, and at least two hard disk arrays interconnected with said device adapter, wherein each hard disk array comprises eight disk drives, wherein each of the plurality of three information and storage systems is interconnected with the same host computer via a second communication link, and wherein each of the plurality of three information storage and retrieval systems is interconnected with a different remote storage location, and wherein each of said plurality of three information storage and retrieval systems comprises two ~~active~~ controllers, comprising:

~~computer readable program code which causes said programmable computer to provide, using peer to peer copy operations, information to an information storage medium disposed in an interconnected remote storage location;~~

~~computer readable program code which causes said programmable computer to receive from said host computer a designation as a master controller and a designation that the remaining controllers comprise target controllers, wherein said master controller receives one or more commands from said host computer and then issues one or more master controller commands to each of said target controllers;~~

~~computer readable program code which causes said programmable computer to generate one or more master controller commands;~~

computer readable program code which causes said programmable computer to provide said one or more master controller commands to each of said target controllers, wherein said one or more master controller commands cause said target controllers to adjust the flow of data into and out of each of said one or more information storage and retrieval systems.

14. (original) The computer program product of claim 13, further comprising computer readable program code which causes said programmable computer to provide to each of said target controllers one or more master controller commands causing each of said target controllers to stop accepting write operations from said one or more host computers.

15. (original) The computer program product of claim 13, further comprising computer readable program code which causes said programmable computer to provide to each of said target controllers one or more master controller commands causing each of said target controllers to form one or more consistency groups.

16. (previously presented) The computer program product of claim 13, wherein each of said information storage and retrieval systems is capable of sending information a different remote storage location, further comprising computer readable program code which causes said programmable computer to provide to each of said target controllers one or more master controller commands causing each of said target controllers to stop sending data to said remote storage locations.

17. (original) The computer program product of claim 13, further comprising:
computer readable program code which causes said programmable computer to receive a designation as a master controller;
computer readable program code which causes said programmable computer to receive

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a host computer policy command;

computer readable program code which causes said programmable computer to provide at a first time to each of the target controllers one or more first master controller commands; and

computer readable program code which causes said programmable computer to provide at a second time to each of the target controllers one or more second master controller commands.

18. (original) The computer program product of claim 13, further comprising computer readable program code which causes said programmable computer to receive status information from each of said target controllers.

19. Canceled.

20. Canceled.